



## Research Article

### “ENDOSCOPIC ASSESSMENT OF STRUCTURAL CHANGES IN SMALL INTESTINE WITH SPECIAL REFERENCE TO GRAHANI ROGA.”

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## ABSTRACT

Today's fast life and modern life-style is leading to faulty food and living habits of people, which has made them more prone to gastrointestinal disturbances, like *Grahaniroga*. The word *grahani* described in *ayurvedic* text creates lot of confusion. The *ayurvedic* text shows the usage of word *grahani* both in context as an organ and mostly as disease. Anatomically site of *grahani* described in the *ayurvedic* text can be co-related with mucosal layers of small intestine. Also *Grahaniroga* is said to be Disease which occurs due to *Agnimandya* & Digestive problems. Observational study was done on 30 patients of *grahaniroga* at Joy Hospital, Chembur, Mumbai. Subjective assessment was done on the basis of Patients *Abhyavaranshakti*(Intake capacity), *JaranShakti*(Digestive capacity), *Agni parikshan* and *koshta parikshan* with the help of *prashnapariksha* at Baseline. Objective criteria was OGD scopy, Colonoscopy to see the structural changes in *grahani* organ (small intestine) with respect to different type of *grahaniroga*. Also Stool analysis on the basis of *Bhautikparikshan* and Laboratory examination was done. Chi square test was applied to objective parameters which was highly significant at 5% level of significance. The pathological (structural) changes seen in *grahaniroga* are similar to the changes which are seen in certain diseases of small intestine. Also organ affected in *grahaniroga* is small intestine viz. duodenum, jejunum & ileum. The structure (microscopic) of small intestine (*grahani*) i.e. mucosal layers of small intestine can be considered as site of *grahani*. Thus the structural changes in *grahaniroga* are directly related to the type of *grahaniroga*.

**Keywords:-** *Grahanisharir*, *Grahaniroga*, Smallintestine, OGD scopy, Colonoscopy.

## INTRODUCTION

Urbanization and globalization has brought shift in the dietary pattern. In today's fast life due to the dietary indulgences of the people most of the people are prone to have functional digestive problems. There are many ambiguities about the word *Grahaniroga*. *Charak* describes *Grahaniroga* as a site of *agni*.<sup>[1]</sup> *Sushruta* has describes *grahani*

with respect to location of *pitta* i.e. in between *amashaya* and *pakvashaya*,<sup>[2]</sup> also in *sushrut sharir sthan grahani* has been described with respect to the *pittadhara kala*.<sup>[3]</sup> In *Ayurvedic* text *Grahaniroga* is mostly described as a disease for e.g. *grahaniroga*, *grahaniroga*, *grahaniroga*, *grahaniroga* etc. *Vagbhatta* has given a list of some obstinate (*Mahagada*) diseases and *grahaniroga* has been

included in that list.<sup>[4]</sup> *Agnimandya* is the prime cause of most of diseases,<sup>[5]</sup> *Agni* is an entity that has power of digestion of food at different level in different place. *Charaka* has described four type of *agni – tikshana, manda, vishama, & sama*. The first three types of disorders of *agni* constitute *grahanidosha*.<sup>[6]</sup> *Samanvayu* located near the *Agni* moves in the *koshta*, withholds the food brought by the *pranavayu* from the *amashaya* in the ailmentary tract for some time, digests, separates the essence and wastes and eliminates the wastes. When *agni* is in its normal state it is the strength of *Grahani*. But due to its *ashrayashrayi* relation when *agni* is impaired it is responsible for the causation of *grahanidosha*.<sup>[7]</sup> So hereby, an effort is being made to identify and associate the structural changes seen in *grahani*, i.e. small intestine viz. duodenum, jejunum and ileum in different types of *grahaniroga* mentioned in *Madhavnidan* with the help of modern diagnostic aids i.e. OGDscopy, colonoscopy etc, so that it would support the diagnostic methods in *ayurvedic* text to diagnose *grahaniroga* early and treat it effectively.

## MATERIAL AND METHODS

**Selection of cases:** There was random selection of 30 patients from O.P.D. and I.P.D. of Joy Hospital, chembur, Mumbai. Study was carried out as per Ethical Clearance Number –1885/3/09-10

**Type of study:** Observational study

### Inclusion Criteria:

1. The patients were selected after preliminary diagnosis of *grahaniroga* with the help of questionnaire prepared on the basis of *samanya lakshanas* of *grahaniroga* mentioned in *madhavnidan*.<sup>[8]</sup>
2. Sex : both Male & Female
3. Age between 16-60 years
4. Informed consent signed

### Exclusion Criteria :-

1. Patients with acute condition like haematemesis, ano-rectal bleeding and chronic conditions like malignancy.
2. Major systemic illness such as Koch's , Ca etc
3. HIV/HbsAg +ve patients

**Statistical test:** Statistical analysis was done by applying chi-square test to objective parameters of endoscopy (OGDscopy& colonoscopy).<sup>[9]</sup>

### Criteria of assessment

- The randomly selected patients were classified among the different type of *grahaniroga* (*Vataj, Pittaj, Kaphaj, Tridoshaj*) according to *lakshanas* in *madhavnidan*.<sup>[10]</sup>
- The structural changes seen in the *grahani* of these diagnosed *grahaniroga* patients were visualized with the help of required modern scopes (OGDSCOPY, COLONOSCOPY)
- The entire small intestine was observed but more emphasis was given on duodenum and ileo-caecal junction as majority changes are anticipated in this two particular region. Generally the mucosa of the small intestine was observed by the endoscopist to find out the abnormality in the small intestine with the help of endoscope.
- Upper gastrointestinal endoscopy was done for all the patients, and the status of the duodenal folds were recorded (normal, attenuation, and scalloping of mucosal folds).

- The modified Marsh grading system was used for grading mucosal changes: <sup>[11]</sup>  
Grade 0, normal histology;  
Grade 1, Increase of intraepithelial lymphocytes (IEL)  
Grade 2, Increased IELs along with crypt hypertrophy or a Crypt(C)  
Grade 3, Increased IELs along with crypt hypertrophy and variable degree of villous atrophy.
- Presence of mucosal oedema was carefully looked for.

### Subjective Parameter-

Patients *Abhyavaranshakti*, *JaranShakti*, *Agni parikshan* and *koshtaparikshan* was done with the help of *prashnapariksha*.

### Objective Parameter-

#### 1. Stool analysis

Since the cardinal symptom of grahaniroga is *Muhurbadha Muhurdravam mala parikshan* was done by following methods. :

A) *Bhautikparikshan* :

a) *Jalanimajjan* : To find whether the stool gets submerged or floats on the water. While doing this test the stool sample was placed in the test tube containing distill water and observed whether it gets submerged or floats on the water.

b) *Sahanan* : To know the consistency of the stools.

Gross examination of stool with the naked eye was done to know consistency of stool (Formed, soft, liquid, semi solid, semi liquid, watery).

B) Laboratory examination was done in which macroscopic and microscopic examination of stools.

2. OGDscopy & colonoscopy to see Structural changes in *Grahani Avayava*.

## RESULTS

### % OF AGNI WISE DISTRIBUTION OF PATIENTS

Agni	Vataja	Pittaja	Kaphaja	Sannipataja	Grand Total
Manda	6.67%	26.67%	23.33%	3.33%	60.00%
Tikshna	0.00%	6.67%	0.00%	0.00%	6.67%
Vishama	23.33%	10.00%	0.00%	0.00%	33.33%
Grand Total	30.00%	43.33%	23.33%	3.33%	100.00%

**% OF DISTRIBUTION OF PARASITE INFECTION IN STOOL**

Parasite Infection in Stools	Vataj	Pittaj	Kaphaj	Sannipataj	Grand Total
Ascaris	0.00%	6.67%	0.00%	0.00%	6.67%
E.Histolytica	3.33%	3.33%	3.33%	0.00%	10.00%
Ova of giardia	0.00%	0.00%	20.00%	0.00%	20.00%
Threadworm and Pin worms	20.00%	16.67%	0.00%	0.00%	36.67%
Tapeworm	3.33%	3.33%	0.00%	0.00%	6.67%
Nil	3.33%	13.33%	0.00%	3.33%	20.00%
Grand Total	30.00%	43.33%	23.33%	3.33%	100.00%

**% OF DISTRIBUTION OF FREQUENCY OF STOOL**

Frequency of Stools	Vataja	Pittaja	Kaphaja	Sannipataja	Grand Total
1 to 3	13.33%	16.67%	3.33%	0.00%	33.33%
4 to 6	13.33%	26.67%	20.00%	0.00%	60.00%
7 to 9	3.33%	0.00%	0.00%	3.33%	6.67%
Grand Total	30.00%	43.33%	23.33%	3.33%	100.00%

**% OF DISTRIBUTION OF CONSISTENCY OF STOOL**

Consistency of Stool	Vataja	Pittaja	Kaphaja	Sannipataja	Grand Total
Semiliquid	6.67%	26.67%	6.67%	0.00%	40.00%
Semisolid	23.33%	13.33%	13.33%	0.00%	50.00%
Watery	0.00%	3.33%	3.33%	3.33%	10.00%
Grand Total	30.00%	43.33%	23.33%	3.33%	100.00%

**% OF JARANSHAKTI WISE DISTRIBUTION OF PATIENTS**

Jaranashakti	Vataja	Pittaja	Kaphaja	Sannipataja	Grand Total
Heena	13.33%	16.67%	20.00%	3.33%	53.33%
Madhyama	13.33%	20.00%	3.33%	0.00%	36.67%
Uttama	3.33%	6.67%	0.00%	0.00%	10.00%
Grand Total	30.00%	43.33%	23.33%	3.33%	100.00%

## % OF DISTRIBUTION OF STRUCTURAL CHANGES IN GRAHANI (SMALL INTESTINE) OF SELECTED PATIENTS

Structural changes in grahani roga	Vataj	Pittaj	Kaphaj	Sannipataj	Grand Total
Ulcer in ileo-caecum Junction	0.00%	6.67%	0.00%	0.00%	6.67%
Dilatation of intestine with flattening of mucosal folds	6.67%	0.00%	0.00%	0.00%	6.67%
Duodenitis With Duodenal Ulcer	0.00%	26.67%	0.00%	0.00%	26.67%
Growth at ileo -caecum Junction	13.33%	0.00%	0.00%	0.00%	13.33%
Normal	3.33%	0.00%	0.00%	0.00%	3.33%
Intestinal narrowing	6.67%	0.00%	0.00%	0.00%	6.67%
Congestion of ileum	0.00%	0.00%	6.67%	0.00%	6.67%
Superficial ulcer in ileum	0.00%	0.00%	16.67%	0.00%	16.67%
Duodenal Ulcer	0.00%	3.33%	0.00%	0.00%	3.33%
Duodenitis	0.00%	6.67%	0.00%	0.00%	6.67%
Multiple Ulcer in ileo-caecum Junction & Intestinal narrowing	0.00%	0.00%	0.00%	3.33%	3.33%
Grand Total	30.00%	43.33%	23.33%	3.33%	100.00%

### DISCUSSION

In the study it is seen that 26.67% males & 3.33% females were having *vataj grahani* & 16.67% male & 26.67% female were having *pittaj grahani* and 13.33% male & 10% female were having *kaphaj grahani* while 3.33% females were having *sannipataj grahani*. More male patients i.e. 56.67% were found suffering from *grahaniroga*, though the illness does not show any prediction about sex. Analysis of *agni* showed that 60% patients of *grahani* were having *mandagni* followed by *vishmagani* in 33% and 7% patients having *tikshnagni*. *Agni* has important role in *grahani*. In *mandagni* patients cannot digest food properly. *Vishmagani* has unpredictable behaviour sometimes it can digest food and sometimes cannot digest food properly. In the study it was seen that when patients suffered from indigestion they had increased *lakshanas* like *adhaman*, *trushna*, *chhardi*, *amlodgar*. The importance of state of *agni* is clearly reflected in the study but it does not reflect any significance with respect to its different type.

*Muhurbaddham Muhurdrawam* being the cardinal symptom of *grahaniroga* detail *malaparikshan* as per *ayurvedic* text and modern laboratory stool examination was done. In *bhautikparikshan* when all the stool sample were

put in distill water, all submerged in it which is a sign of *sama mala*. This coincides with the quote “*Sa Dushto Bahusho Bhuktam Amameva Vimunchati.*” On the microscopic examination of stool it was observed that 23.33% patients of *kaphaj grahani* had protozoas like *E.histolytica* and ova of *giardia* in their stool, which is significant with respective type of *grahaniroga*. 30% patients of *pittaj grahani* and *vataj grahani* had helminthes like threadworms, pinworms, *ascaris* and tapeworm in their stool. This suggest that worm infestation is one of the dominating cause of *grahaniroga*. The stool sample of all the 30 patients was physically examined for its consistency and was grouped under 3 category i.e. semi solid, semi liquid and watery. The observations showed that 50% of the patients had semi solid and 40% had semi liquid consistency of stool, which can be co-related with the cardinal symptom of *grahaniroga* i.e. *muhurbhadham muhurdravam*.

In the patients of *vataj grahani* dilatation of intestine with flattening of mucosal folds and growth at ileo-caecal junction was observed in 26.67% patients The dilatation of intestine is very much relevant with the *lakshan vyas* which is one of the *vata prakopa lakshanas*, hence *ayurvedic* approach of type wise symptoms was confirmed. In

the patients of *pittaj grahani*, the frequency of ulcers with duodenitis were observed in 43.33% patients which is comparatively higher hence *ayurvedic* pathological concept of *sympatamatolgy* of *Pittaj Grahani* was confirmed. In most patients of *kaphaj grahani* i.e. Superficial ulcer along with congestion in ileum was prominently observed because of the sticky secretions, in ileum due to infective pathology (worms), which is one of the *kapha prakopa hetu*, hence the symptom was confirmed.

Multiple ulcers in ileocecal junction with intestinal narrowing was one of the significant finding found in 3.33% specifically selected patient of *Sannipataj Grahani* which is probably because of the *Tridoshaj samprapti*.

The structural changes found in different types of *grahaniroga* are in *Vataj Grahani* Dilatation of intestine with flattening of mucosal folds 6%, Intestinal narrowing 6%, Growth at ileo-caecal junction 12%. In *Pittaj Grahani* Duodenal ulcer with duodenitis 36%, Ulcer at ileo-caecal junction 7.3%. In *Kaphaj Grahani* congestion of ileum 6%. Superficial ulcer in ileum 17.3%.in *Sannipataj Grahani* Multiple ulcers at ileo-caecal junction and intestinal Narrowing 3.33% & 6% of patients showed normal scopies. chi-square test is applied to objective parameter which highly significant at 5% level of significance. Thus, we can conclude that the structural changes in *grahaniroga* are directly related to the type of *grahaniroga*.

The above investigational finding obtain from the observations in the present study shows that the organs affected in *GrahaniRoga* are duodenum, jejunum and ileum which are the parts of *shudrantra* i.e. the small intestine. After the analysis of the statistical data the chi-square calculated is greater than the chi-square tabulated at 5% level of significance. We can conclude that the stuctural changes in *grahaniroga* are directly related to the type of *grahaniroga*.

## CONCLUSION

- 1) From the compilatory study of *grahani* and the investigational findings obtained from the patients subjected to OGD & Colonoscopy it was found that the organ affected in *grahaniroga* is small intestine viz duodenum, jejunum & ileum.
- 2) The structure (microscopic) of small instetine (*grahani*) i.e. mucosal and submucosal layers of small intestine can be considered as the site (*Sthana*) of *grahani*.

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